

31IS Series and 32IS Heavy Duty Series Intrinsically Safe Industrial Pressure Transmitters

- ▶ Ex II 1G; Ex ia IIB T4 Ga
- ▶ The 3XIS series is certified Intrinsically Safe for use in Group IIB Hazardous Areas, Zones 0, 1 and 2
- ▶ Certification: ATEX Certificate Baseefa10ATEX0196
IECEX Certificate GB/BAS/ExTR10/0230/00

For OEMs that need intrinsically safe pressure sensors with consistent high levels of performance, reliability and stability, the 31/32IS Series sputtered thin film units offer an unbeatable price performance ratio in a small package size. Their size makes them ideal for installation where space is at a premium. They feature all stainless steel wetted parts, a broad selection of electrical and pressure connections and a wide choice of electrical outputs.

32IS Series transmitters feature a thicker diaphragm and a pressure restrictor to withstand the rigors of cavitation or extreme pressure spikes, delivering years of reliable and stable performance in pulsating applications.

Specifications

Performance	
Long Term Drift	0.2% FS/YR (non-cumulative)
Accuracy	0.25% FS
Thermal Error	
31IS	±1.5% max, ±1% typical / 212°F (100°C)
32IS	±2% max
Operating & Compensated Temperatures	
	-40°F to +176°F (-40°C to +80°C)
Zero Tolerance, Max.	0.5% of span
Span Tolerance, Max.	0.5% of span
Fatigue Life	Designed for more than 100 M cycles
Mechanical Configuration	
Pressure Port	See under "How to Order," last page
Wetted Parts	17-4 PH Stainless Steel
Electrical Connection	See under "How to Order," last page
Enclosure	IP67 (IP65 for electrical code G)
Vibration	BSEN 60068-2-6 (FC) Sine (20G) BSEN 60068-2-64 (FH) Random (14.1 Grms)
Shock	BSEN 60068-2-27 (Ea) (50G, 11ms)
Approvals	
ATEX	Ex II 1G; Ex ia IIB T4 Ga, -40°F ≤ Ta ≤ +176°F (-40°C ≤ Ta ≤ +80°C)
IECEX	Ex ia IIB T4 Ga -40°F ≤ Ta ≤ +176°F (-40°C ≤ Ta ≤ +80°C)
ATEX/IECEX Common	When used in conjunction with a Zener safety barrier or Galvanic Isolation barrier. Fully RoHS Compliant
Weight	1.8 to 5.3 ounces (50-150 grams). Configuration dependant

EMC Specifications

Emissions Tests: EN61326-1:2006 and EN61326-2-3:2006	
EN55011:2007	Radiated Emissions: 30-230MHz 30dB µV/M @10M 230-1000MHz 37dB µV/M @10M
Immunity Tests: EN61326-1:2006 and EN61326-2-3:2006	
EN61000-4-2:2009	Electrostatic Discharge: ±4Kv contact ±8Kv air
EN61000-4-3:2006	Radiated Immunity: 10V/M 80-1000MHz 3V/M 1400-2000MHz 1V/M 2000-2700MHz
EN61000-4-4:2004	Fast Transients: ±0.25, 0.5, 1Kv
EN61000-4-6:2007	Conducted Immunity: 3V 0.15 to 80MHz 80% 1KHz modulation



Individual Specifications

Voltage	
Output (3-wire)	0V min. to 10V max. See under "How to Order," last page
Supply Voltage	1 Volt above full scale to 30V max @ 4.5 mA
Source and Sinks	2 mA
Current	
Output (2-wire)	4-20 mA
Supply Voltage	8-24 Volts measured at the input to the transducer terminals
Maximum Loop Resistance	(Supply Voltage – 8) x 50ohms See Graph
Ratiometric Output	
Output	0.5 to 4.5V (Source and sink 2mA)
Supply Voltage	5 Vdc ±10% @ 4.5mA

Pressure Capability

Pressure Range PSI (Bar)	Proof Pressure (x Full Scale)		Burst Pressure (x Full Scale)	
	31IS	32IS	31IS	32IS
100-300 (7-20)	2.00 x FS	3.00 x FS	40 x FS	
500-1,500 (40-100)			20 x FS	
2,000-6,000 (140-400)			10 x FS	
10,000 (700)			> 60,000 PSI (4,000 bar)	
15,000 (1,000)	2.50 x FS			
25,000 (1,800)	1.70 x FS			
30,000 (2,200)	1.40 x FS	—		

Pressure Ports

SAE

	1/8"-27 NPT	1/8"-27 NPTF Dryseal	1/4"-18 NPT	1/4"-18 NPT Internal	1/4"-18 NPTF Dryseal
Dimensions in Inches					
Fitting Code	08	4D	02	0E	4C
Torque	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*	2-3 TFFT*

	SAE J1926/2:3/8-24	7/16"-20 UNF	7/16"-20 UNF with 37° Flare	SAE 4 Female 7/16" Schraeder	9/16-18 "Heavy Duty"
Dimensions in Inches					
Fitting Code	4N	1J	04	1G	1P
Torque	18-20 NM	18-20 NM	15-16 NM	18-20 NM	18-20 NM

BSP & Metric

	G1/4"-19 External	G1/4"-19 A Integral Face Seal	M12 x 1.5	M12x1.5 HP Metal Washer Seal	M14 x 1.5
Dimensions in MM					
Fitting Code	01	05	0L	2T	0K
Torque	30-35NM	30-35 NM	28-30 NM	30-35 NM	2-3 TFFT*

*NPT Threads 2-3 turns from finger tight. Wrench tighten 2-3 turns.

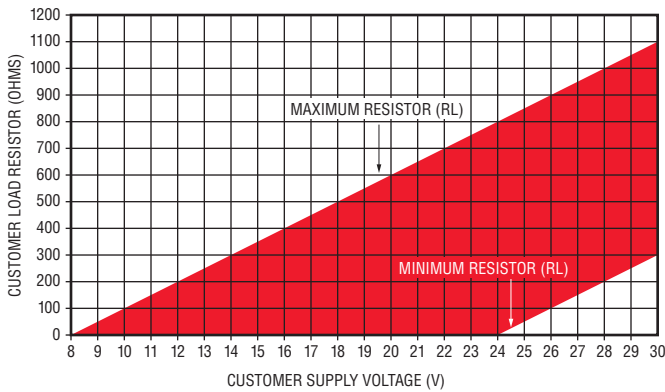
General Notes:

1. The diameter of all cans is 19 mm (0.748")
2. Hex is 22 mm (0.866") Across Flats (A/F) for deep socket mounting

Electrical Connector

DIN 9.4 mm		M12 x 1P		Amp Superseal 1.5		Deutsch DT04-4P		DIN 43650A		
<p>POLARIZING WIDE CONTACT</p>										
Code R		Code E		Code 6		Code 8		Code G		
Pin #	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode	Voltage Mode	Current Mode
1	V _{supply}	Supply	V _{supply}	Supply	V _{out}	No Connect	Ground	Return	V _{supply}	Supply
2	Ground	Return	V _{out}	No Connect	Ground	Return	V _{supply}	Supply	Ground	Return
3	V _{out}	No Connect	Ground	Return	V _{supply}	Supply	No Connect	No Connect	V _{out}	No Connect
4	No Connect	No Connect	No Connect	No Connect	—	—	V _{out}	No Connect	No Connect	No Connect

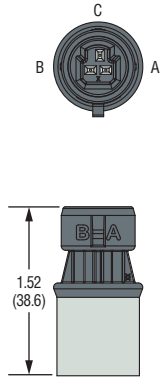
Current Output Mode (Load Resistor Range)



Minimum Resistor Value = $50 \cdot (+V - 24)$ for $+V > 24V$
 Maximum Resistor Value = $50 \cdot (+V - 8)$ for $+V > 8V$

Cable-Out Types

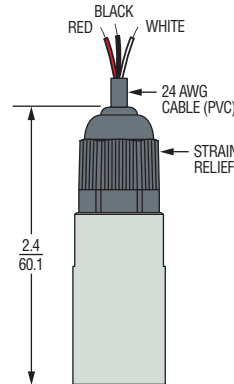
Packard MetriPack



Code 9

Pin ID	Voltage Mode	Current Mode
C	V _{out}	No Connect
A	Ground	Return
B	V _{supply}	Supply
—	—	—

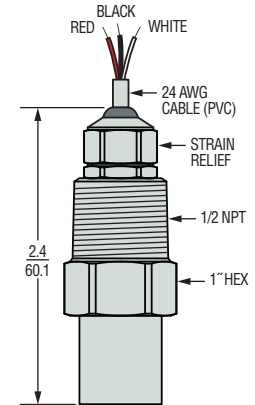
Cable



Code F

Wire Color	Voltage Mode	Current Mode
Red	Supply	Supply
Black	Ground	Return
White	V _{out}	No Connect

1/2" Conduit Connection



Code 3

Voltage Mode	Current Mode
Supply	Supply
Ground	Return
V _{out}	No Connect

How to Order

Use the **bold** characters from the chart below to construct a product code

Series **31IS** / **32IS** - Pressure Transducer

Output **B** - 4-20 mA **C** - 1-6 V **H** - 1-5 V
N - 0.5-4.5 V **R** - 0-5 V¹ **S** - 0-10 V¹
T - 0.5-4.5 V Ratiometric

Pressure Range - psi

100PG - 0-100 psiG	15CPS - 0-1,500 psiS	10KPS = 0-10,000 psiS
150PG - 0-150 psiG	20CPS - 0-2,000 psiS	15KPS - 0-15,000 psiS ²
200PG - 0-200 psiG	25CPS - 0-2,500 psiS	20KPS - 0-20,000 psiS ²
300PG - 0-300 psiG	30CPS - 0-3,000 psiS	25KPS - 0-25,000 psiS ²
500PG - 0-500 psiG	35CPS - 0-3,500 psiS	
600PG - 0-600 psiG	40CPS - 0-4,000 psiS	
750PG - 0-750 psiG	50CPS - 0-5,000 psiS	
10CPG - 0-1,000 psiG	60CPS - 0-6,000 psiS	
	75CPS - 0-7,500 psiS	

Pressure Range - bar

0007G - 0-7 barG	0100S - 0-100 barS	1000S - 1,000 barS ²
0010G - 0-10 barG	0160S - 0-160 barS	1600S - 1,600 barS ²
0016G - 0-16 barG	0250S - 0-250 barS	
0025G - 0-25 barG	0400S - 0-400 barS	
0040G - 0-40 barG	0600S - 0-600 barS	
0060G - 0-60 barG		

Notes:

- For use with pull-up or pull-down resistors, contact factory.
- Ranges 15,000 psi (1,000 bar) and above available with **-2T** pressure port only.
- Pressure ports **0E** and **1G** are NOT available with the Restrictor option.
- For electrical codes **F** & **3**, specify cable length in meters.

Product Code Example: **31IS B 200PG 02 B R 01**

- 31IS** - Series
- B** - Output
- 200PG** - Pressure Range
- 02** - Cable Length
- B** - Electrical Connection
- R** - Restrictor
- 01** - Cable Length

Cable Length (For electrical connections F& 3 only)

00 - No Cable	03 - 3 meters
01 - 1 meter	04 - 4 meters
02 - 2 meters	05 - 5 meters

Optional Restrictor (32IS only)

- R** - Restrictor
- 0** - No Restrictor

Electrical Connection⁴

- B** - Industrial DIN 9.4 mm (mating connector not supplied)
- E** - M12 x 1P (4-Pin)
- F** - Cable version
- G** - Large DIN
- R** - Industrial DIN 9.4 mm (alternate pin out)
- 3** - 1/2" NPT Male Conduit
- 6** - Amp - Superseal 1.5 Series
- 8** - Deutsch DT04-4P
- 9** - Packard MetriPack

Pressure Port³

- 08** - 1/8-27 NPT External
- 02** - 1/4-18 NPT External
- 04** - 7/16-20 External (SAE #4, J514)
- 1J** - 7/16-20 External (SAE #4, J1926-2)
- 0E** - 1/4"-18 NPT Internal
- 0K** - M14 x 1.5 Straight
- 1G** - Schrader SAE #4, 7/16" Internal
- 1P** - SAE 6 (9/16"-18 UNF 2A)
- 4C** - 1/4-18 NPTF External (Dryseal)
- 4D** - 1/8-27 NPTF External (Dryseal)
- 4N** - SAE 3 (3/8-24 UNF External)
- 01** - G1/4 External
- 05** - G1/4 External Soft Seal
- 0L** - M12 x 1.5 (<15,000 psi, 1,000 bar)
- 2T** - M12 x 1.5 (6g) (>=15,000 psi, 1,000 bar)